

**HOW MODEST, INCREMENTAL SITE DRIVEN INTERVENTIONS DIFFER IN THEIR IMPACT  
ON SLUM UPGRADING FROM ICONIC PROJECTS**

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By

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## DEDICATION

To my beloved parents Mario and Lydia who always believed in me, who with sacrifices and unconditional support inspired me to pursue my goals and dreams. To them, I will be in eternal gratitude, I would have never gotten this far without you.

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# **CHAPTER 1**

## **INTRODUCTION**

Urban informal settlements have increased dramatically over the last decades throughout major cities in developing countries. Post war industrialization, increased economic opportunities and social freedoms continue to drive urban-to-rural migration despite of the challenging living conditions in this context. As an example of this phenomenon, approximately 20% of Rio de Janeiro's six million inhabitants live in the city's favelas (shanty towns) or other types of informal settlements. Despite physical proximity, rigid class segregation maintains strong physical and social boundaries between the formal and informal city. On the one hand favela residents suffer from a marked social stigma mainly due to the violence and crime associated with local or exterior drug traffic wars in their communities - suggesting the need for top-down "solutions." On the other hand, some scholars are increasingly celebrating the entrepreneurialism of the slums' informal economies and self-organized communal structures, suggesting that successful improvements must be incremental and community-driven.

### **1.1 Thesis Statement**

This thesis asks how modest, incremental site-driven interventions differ in their impact on slum upgrading from iconic projects. The thesis identifies current strategies of slum upgrading through analysis of both theoretical proposals by scholars and contemporary built projects. The thesis proposes that a hybrid blend of these



strategies will address multiple audiences and goals and better guide practitioners on how to intervene and design within these types of spaces. The multiple goals focus on the provision of social integration, self organization and economic opportunities which will result in bettering the quality of life of the people who live in these communities. This hybrid combination of community networked strategies and iconic gestures is tested and applied in a design proposal for the Complexo da Maré favela compound in Rio de Janeiro.

## **1.2 Discourses on slum upgrading through two lenses**

The prevailing social stigma and negative perception of urban informal settlements have lead for decades to slum eradication and clearance as the conventional governmental approach during the midst of the twentieth century. As a result of this, it has lead to the displacement of its local inhabitants in to new Modern social housing projects, many times located in the outskirts of the city. This imposed relocation of these communities out of the city destroyed many of the existing social bonds formed in these eradicated neighborhoods. In most cases, informal settlements arise because of their access to jobs/economic opportunities, making its location an incredible resource because of their relation and proximity to the city. The displacements that took place during this period reflected a total neglect of these inhabitants right to the city.

Nowadays there has certainly been a shift in the discourse and approach on how to intervene in informal settlements. Slum upgrading interventions have turned to be the current approach, which began approximately over two decades ago. As an

example of this shift in paradigm, the Favela Bairro program was a government effort that started in 1995 in Rio de Janeiro. It was the first of its kind and certainly one of the most ambitious slum upgrading programs of Latin America and the world. As a main goal it sought to create urban scale interventions that could positively impact these neighborhoods by supplying basic infrastructure and public spaces as strategies to incorporating them into the social and urban fabric of the formal city. Many scholars, professionals and other experts have advocated for non displacement, allowing tenure security, incremental processes/interventions and most importantly local community involvement in the design and decision making process. All of these will ultimately allow the local inhabitants to take ownership of new created spaces while it foster and create social bonds among the community.

### **1.3 Context - Rio de Janeiro “The Broken City”**

Rio de Janeiro is one of the most important cities of Brazil, mainly because of its cultural, political and economic importance and presence through the country's history. This is the second largest city of Brazil in terms of population, just behind São Paulo, and the sixth largest city of the Americas. Rio is internationally known for its annual Samba Carnival, the statute of Christ the redeemer, it's beautiful beaches of Copacabana and Ipanema and its breathtaking contrasting geography. It is also known for its iconic informal settlements, known as favelas (shantytowns), which stager on top of the steep hills (morros) of the city. Rio de Janeiro is the birthplace of the favela, these settlements currently house approximately 20% of its population. From the most recent data of the census of 2010 made by the IBGE (in English, Brazilian Institute

of Geography and Statistics), the municipality of Rio de Janeiro has a population of 6.3 million inhabitants and a metropolitan population of 12 million. This alarming percentage of the population lives in these informal communities that began to emerge over more than a century ago; in the beginning mainly comprised by migrants from the northeast region of the country in search for better job opportunities and a better future for their families.

Despite of being one of the most visited and attractive cities for tourism and famously known in the social imaginary as the “Marvelous City” (Cidade Maravilhosa), there is still a huge economic and social disparity between the inhabitants of the formal and informal city. This is reflected in the sharp contrasts and juxtapositions of the urban landscape of the city. Zeunir Ventura a Brazilian journalist wrote a book titled *Cidade Partida (Broken City)* in 1994 where he describes the contradictions and the segregation that are present amongst Rio’s social classes. The concepts of “morro” (hill) and “asfalto” (asphalt) are analogous to the prevailing social segregation paradigm. The former concept refers to the favelas, while the later to the urbanized areas of the middle and upper classes. Despite physical proximity, rigid class segregation maintains strong physical and social boundaries between the formal and informal city.

The fragmented and divided character of Rio has brought with it a series of urban and socio-cultural issues related to citizen safety. Along with this comes a marked social stigma amongst favela inhabitants. Justin McGuirk further elaborates in how Rio de Janeiro is a city of contrasts: “Rio is sometimes called – the divided city. Juxtapositions of extreme poverty and wealth are part of what it instantly recognizable. The favela of Vidigal and the neighbouring Sheraton Hotel, the favela of Rocinha

adjacent to the condominiums of São Conrado – it's the stuff of postcards." (McGuirk 102)

## **1.4 Methodology**

The methodology of the investigation in this thesis will be divided in two main parts: the first and most essential, the research, followed by the design application/proposal. The design component will provide a real context which will give me the opportunity to test the main ideas and lessons learned from the research and precedent studies. The research component of this thesis will follow a method of evaluating three scholar's proposals on slum upgrading by a process of distillation of their main ideas communicated through a series of operative diagrams. These diagrams will inform and suggest the design moves that will be tested on the chosen site.

The lessons learned by the scholar's proposals and precedent studies of contemporary projects will be summarized in a conclusion with my final takeaways. These conclusions (taken from the scholar's distillations and precedent takeaways) taken from the research will then be applied and tested on the favela of Complexo da Maré, which is the chosen site of study. The site will also provide crucial information after a preliminary reading of existing conditions and site analysis that will provide clues on which of the research lessons and strategies would better apply to the given conditions of the site, this after stating the problem and a strategy to solve the given problem.

## **Chapter 2**

### **Literature Review & Precedent Studies**

#### **2.1 Expert Distillations – Operative Diagrams**

As an essential part of this study, I reviewed in recent literature what contemporary theory has proposed as strategies that provide incremental, on site, ground up strategies for slum upgrading. This would provide a basic framework that would allow me to better understand the nature of informal settlements and how to design interventions in these types of spaces. I decided to study three scholar's proposals that advocate towards preserving spatial adaptability, flexibility, reuse and incrementalism. Another key factor was that these authors addressed lessons learned from the existing spatial, economic and social relations that exist within these communities.

As a criterion of selection for the chosen authors, I decided to review recent literature that addressed slum upgrading strategies; I used a time limit frame of publication of the last five years. I was also specifically interested in authors that could provide a translation from contemporary theory into design strategies. Their proposals of intervention for these settlements are being used as a first design move and will start to inform my design proposal. There was a process of distillation from each author which resulted into graphically communicating each of their main ideas through a series of operative diagrams. During this distillation process I took from each author what I considered the most essential ideas from their proposals. These operative diagrams will be part of a "tool kit" of takeaways learned from each author which will result in a series

of conclusions that I draw from their proposals. The research focused on the following three chosen authors: Paola B. Jacques, Kim Dovey and Jorge Fiori.

### 2.1.1 Paola B. Jacques

Paola B. Jacques is a Brazilian scholar and researcher; she is currently a professor at the Faculty of Architecture and Urbanism, also a faculty member in the Visual Arts graduate program at the Federal University of Bahia. She has researched extensively about urban informality, specifically on the favelas of Brazil for more than a decade. A review of her research provided me a much better understanding of the nature of favelas, from the architectural to the regional scale of these settlements. Her empirical studies address an understanding of the spatial identity of the favelas, which she calls the “aesthetics of the favelas”. She focuses on the spatial movement qualities of these spaces and emphasizes on how they are always in constant transformation, being forever unfinished. She adamantly rejects top down urbanistic and architectural gestures within the context of the favelas. The following proposals were distilled from her research and translated into operative diagrams:

- Fragment – “The shanties in the favelas are constantly evolving, perpetually unfinished.” (P. Jacques Web) (See Fig. 2.1)

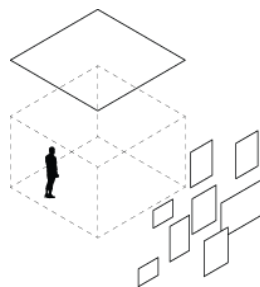


Figure 2.1

- Maze – “The favela’s urban fabric is malleable and flexible. Public and private spaces are inextricably connected in the context of the favelas.” (P. Jacques Web) (See Fig. 2.2)

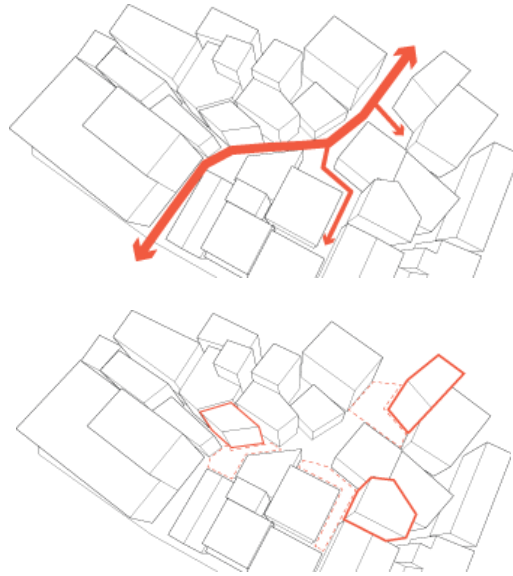


Figure 2.2

- Rhizome – “The favelas are constantly in transformation, never stop growing (first horizontally, and then vertically). They spread organically throughout vacant and undesired spaces of the city.” (P. Jacques Web) (See Fig. 2.3)

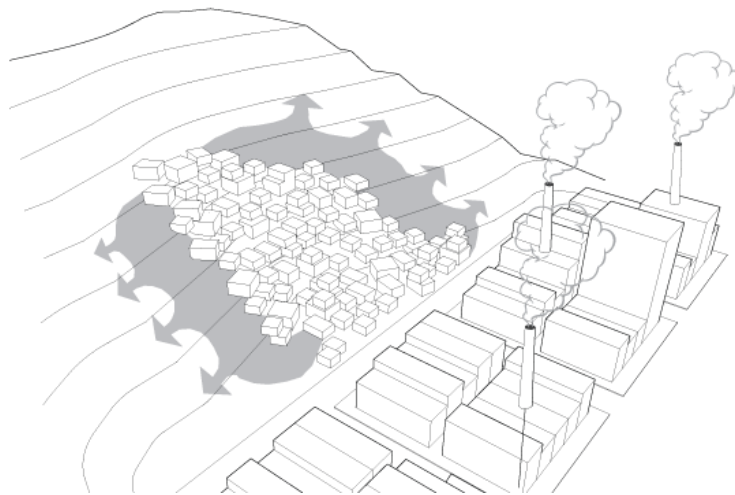


Figure 2.3

- “The borders that separate the favela from the city work symbolically as a “center,” concentrating most of the commerce and services.” (P. Jacques Web)  
(See fig. 2.4)

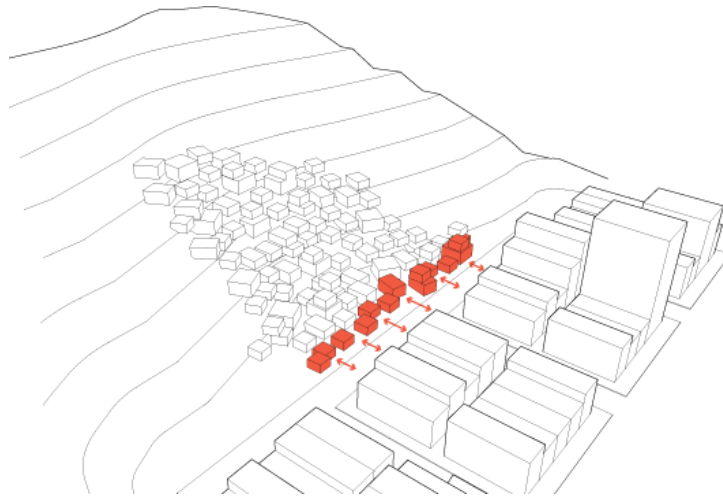


Figure 2.4

- “Intervene in these types of settlements without a conventional project in order to preserve the “space – movement”, architects and urbanists should make subtle, barely visible interventions.” (P. Jacques Web) (See fig. 2.5)

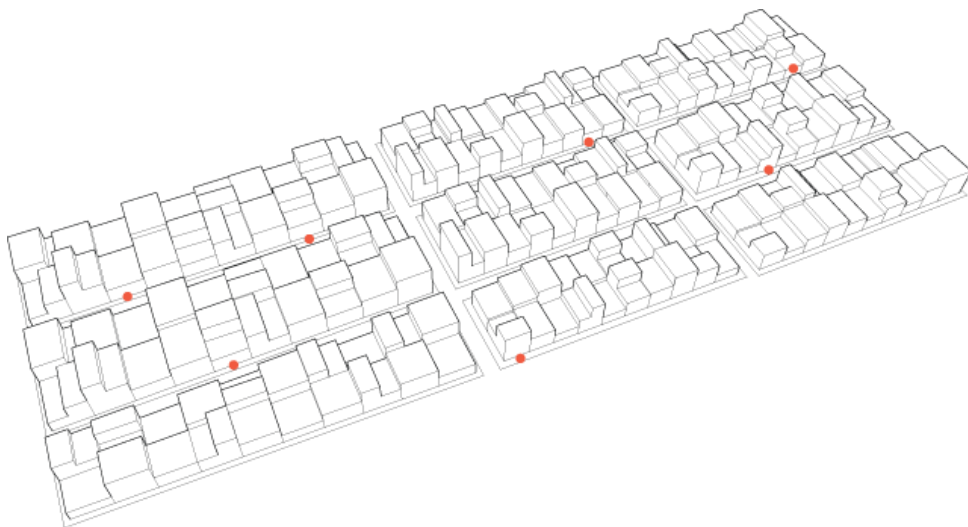


Figure 2.5



### 2.1.2 Kim Dovey

Kim Dovey is an Australian architectural critic and Professor of Architecture and Urban Design at the University of Melbourne, Australia. He has done extensive research in the topics of incrementalism. He strongly argues in favor for an incremental urbanism as a strategy for slum upgrading which embodies self organization within local community involvement. He also advocates for a shift in creativity from the design of fixed outcomes to the design of adaptive types, urban codes and the management of adaptive processes. After reviewing his proposals on incrementalism, from his chapter *Incremental Urbanism: The Emergence of Informal Settlements* there was a process of distillation and appropriation of some of his main ideas and proposals. The following proposals/ideas were distilled from his research and translated to operative diagrams:

- “5 key arguments for incrementalism:
    - Avoiding displacement, preserve adaptability, enabling tenure security, environmentally responsive design, aesthetical/heritage issues.”(K. Dovey)
- (See Fig. 2.6)



Figure 2.6

- “On-site upgrading through a principally incremental process – adapting existing infrastructure, urban design and tenure over time.” (K. Dovey) (See Fig. 2.7)

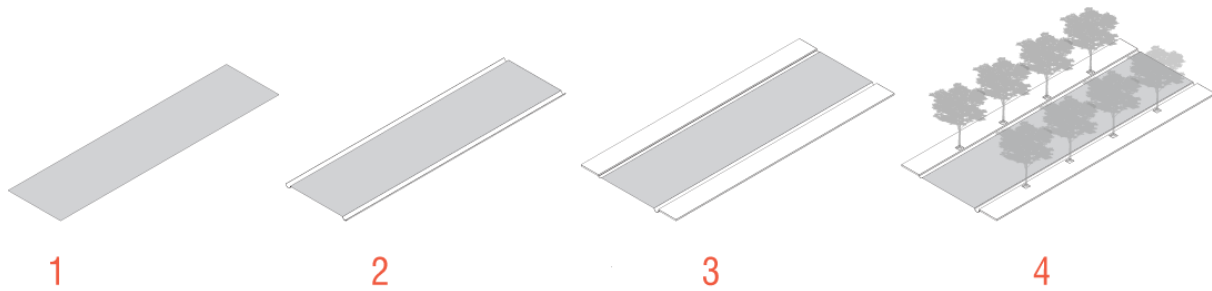


Figure 2.7

- “If the built environment professions are to engage with this challenge of incremental in situ upgrading of informal settlements, then we need to rethink the city in new conceptual frameworks. (See Fig. 2.8)
  - From a focus on fixed outcomes and master plans to adaptive processes
  - From hierarchic organization to networked self-organization
  - From tree-like thinking to rhizomic thought” (K. Dovey)

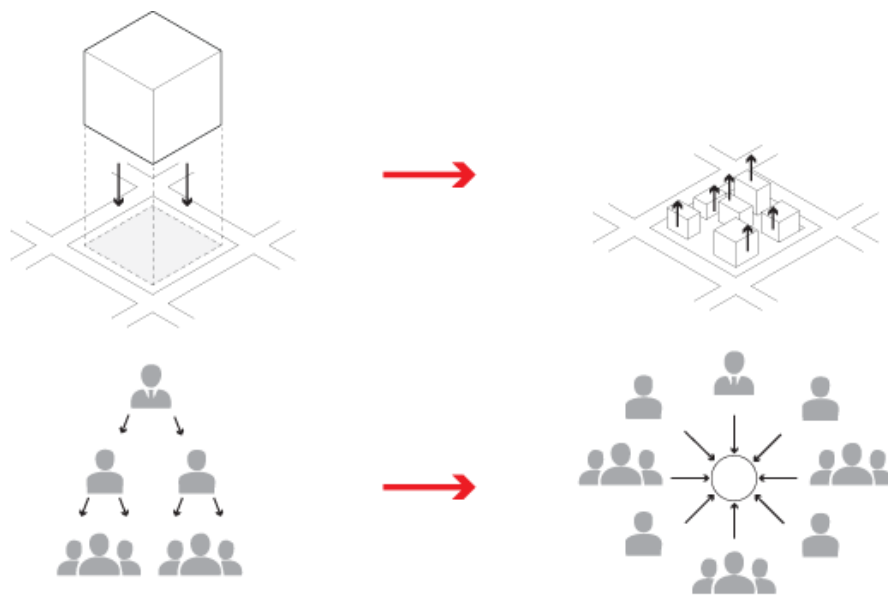


Figure 2.8

- “High levels of informality enable micro- flows of information, goods, materials and practices that produce income and make life sustainable under conditions of poverty. Informality is a resource for managing poverty.” (K. Dovey) (See Fig. 2.9)



Figure 2.9

- “Assemblage - fundamentally dynamic and productive, a dynamism based primarily in horizontal networks of connectivity (pedestrian networks, information flows) yet also stabilized by hierarchical territories (policies, planning codes, laws).” (K. Dovey) (See Fig. 2.10)

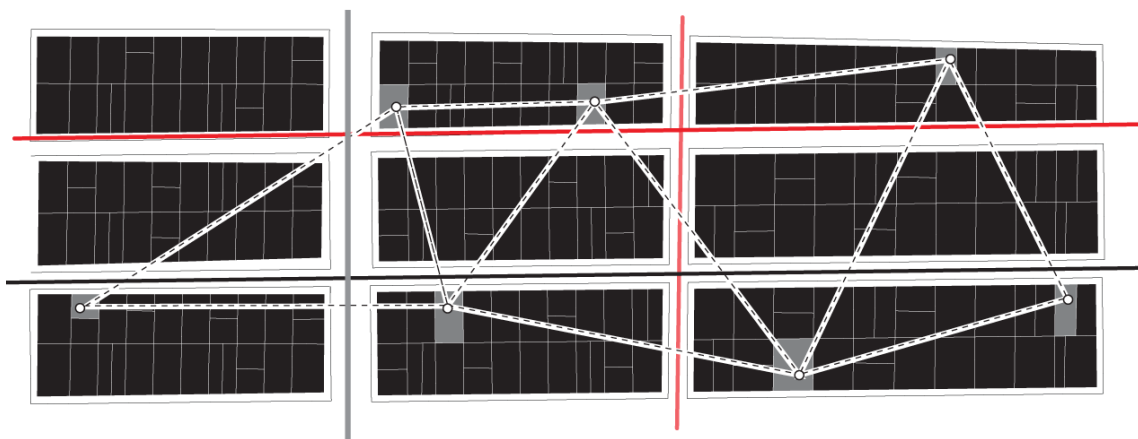


Figure 2.10

### 2.1.3 Jorge Fiori

Jorge Fiori is a Chilean sociologist and urban planner specialized on issues of urban development planning and housing. He worked as a researcher and lecturer in several Chilean and British institutions, currently he is Senior Lecturer at the AA Housing & Urbanism Program and at the Development Planning Unit, University College London. In recent years he has been a consultant and advisor to different city governments in Latin America on housing and slum upgrading policies and the place of urbanism and spatial strategies in dealing with the informal city. He has been involved in academic collaborations providing consultancy to the city governments in Rio de Janeiro, Mexico City, Shanghai, Hanoi, Taipei, Tainan and Recife on the design and planning of mixed use interventions, with particular focus on the interaction of housing and the productivity of territory. The following proposals/ideas were distilled from his research and translated to operative diagrams:

- “Micro-projects: they aim to re-qualify site in small, localized, and often mono-programmatic interventions that do not use spatial design as an instrument to irradiate transformations beyond location. Their contributions to informal urbanism is very limited.” (J. Fiori) (See Fig. 2.11)

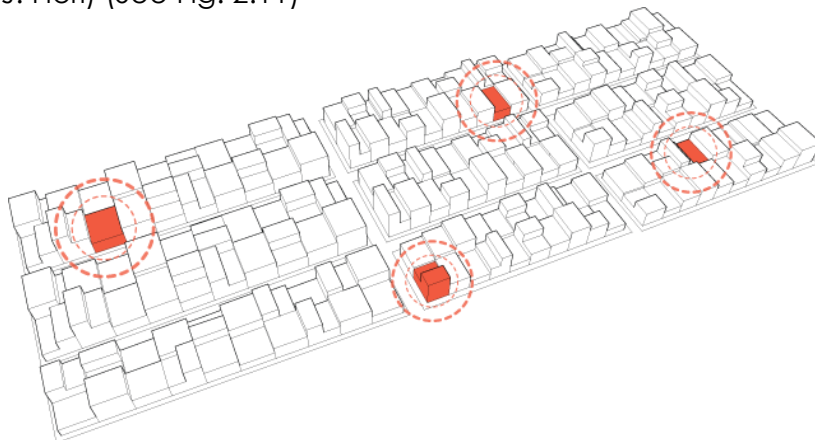


Figure 2.11

- “Open urban projects”: Projects that (small, large, and very large) that seek very explicitly to impact beyond site, articulating and connecting different and multiple scales. “footprints”, “acupunctures” or “benign metastasis” describe the ambition of impacting beyond site on a larger system of relations and across systems.” (J. Fiori)  
(See Fig. 2.12).

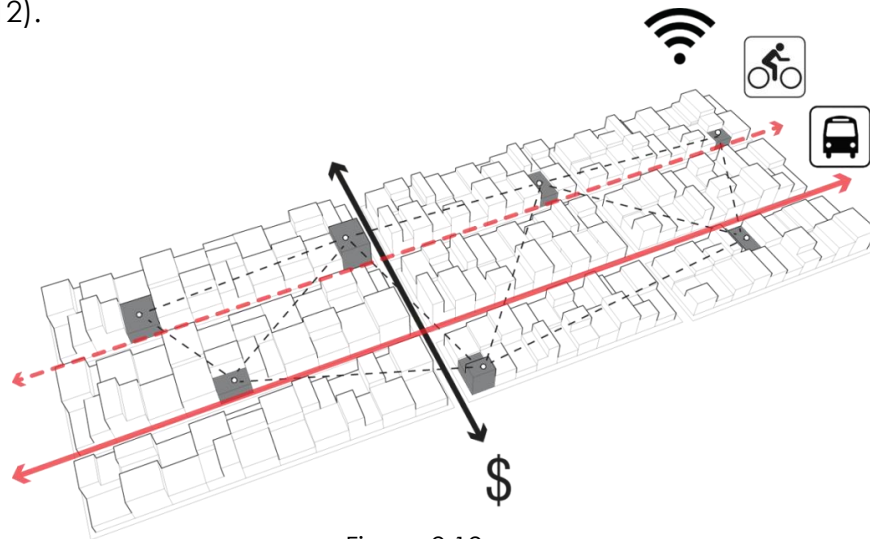


Figure 2.12

- “Formulate spatial strategies that can enhance the productivity of the territory.” (J. Fiori) (See Fig. 2.13)

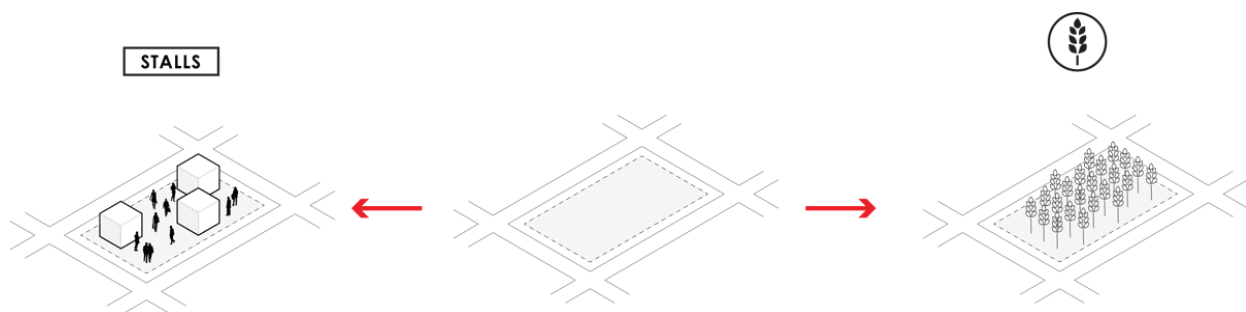


Figure 2.13

- “At the smaller scale (architectural scale) interventions introduce one or few buildings in an informal settlement. The impact beyond site is linked to ways in which these buildings are inserted into the informal fabric through:
  - The Creative mixing of programs, the attempt to connect to a network of existing or future plans for the area.
  - The adoption of new set of rules and institutional arrangements that take into account the informal ways and the informal rules of doing things.” (J. Fiori)(See fig. 2.14)

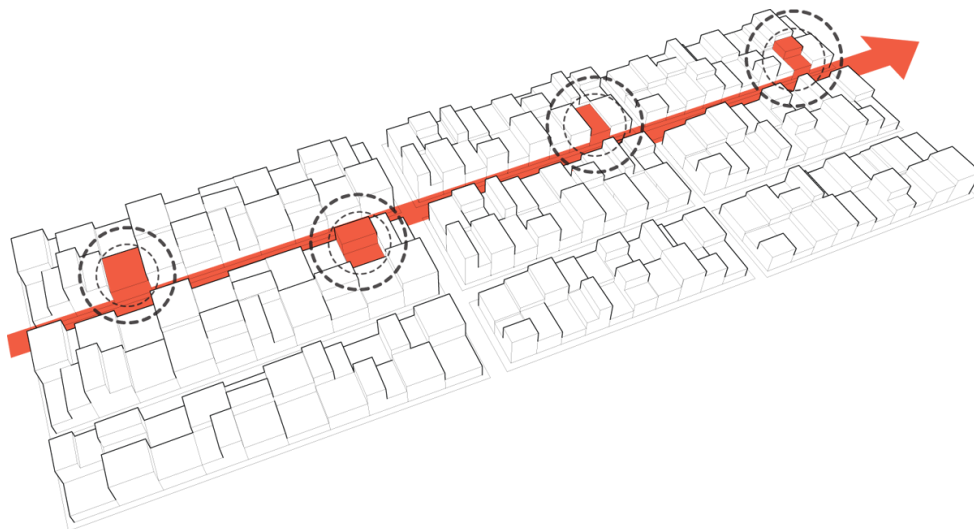


Figure 2.14

## 2.2 Precedent Studies

Another essential component of the research is the precedent studies; I reviewed in recent literature and publications about contemporary projects that reflected best practices which focused on strategies for slum upgrading. After choosing these projects, I classified them in two main categories: the "Icon" (iconic gestural projects) and the "Network" (networked based projects). These two categories will provide different perspectives and approaches of intervention in the context of informal settlements. These will be compared with one another and will be evaluated in terms of their success on how they achieved the main goals/objectives and who (local inhabitants or external population) truly benefited from each intervention. The "Icon" projects can be defined as interventions that intend to create a positive impact on the site through a punctual architectural intervention that intends to create a new identity for the community. I defined the "Network" projects as interventions that create or link to an existing network of infrastructure, transportation system, programmatic elements, pedestrian or biking route, public spaces or any other sort of elements that link back to the city.

As a criteria of selection I decided to choose the projects based on three main characteristics: 1) Time frame limit of ten years to focus on recent projects (from 2005 to the present), 2) Primarily focus on projects in Latin America, 3) The chosen projects have to fit within the two main design categories I established: iconic gestural projects or the networked based projects. The study of these precedents will provide a complement to the basic framework pulled from the expert distillations, by doing so, this would allow

me to better understand and draw a comparison by built examples of interventions that are in the context of informality. and how to design interventions in these types of spaces.



Figure 2.15

2.2.1 Icon Project – Parque Biblioteca España (2007): Medellín, Colombia. Giancarlo Mazzanti (See Fig. 2.15)

One of the main goals of this project was to create a new identity for the community of Santo Domingo Savio, one of the poorest and most violent barrios in Medellín, as a result of this project, it is now a destination in the city. The city of



Medellin's main strategies were to commission prestigious architects to design public institutions focusing on education, public spaces and transportation in the most marginalized communities of the city. As a major objective, the mayor of Medellín decided to prioritize and "invest in civil commitment instead of in public security". This strategy has been applied throughout strategic neighborhoods all over the city. As a result, lower crime levels have been seen in reports over the last decade. This contrasts when in the early 90's the city was one of the crime capitals of the world.

The project is visible from many parts of the city; it redefines itself as the symbol of a new Medellín. One important strategy was to provide education accessibility for this community by incorporating the following programs in three main sections: a reading room, recreational area, an auditorium space and additionally a program called center for the development of work opportunities (CEDEZO), which provides practical support for economic self-help activities. Additionally, another major component of the project was a cable car that connected the city with the hill where the project lies, this was a design move that would allow to provide easier accessibility for the local inhabitants to their community and visitors would benefit as well.

This intervention addresses two main audiences; first the local inhabitants of Santo Domingo Savio for whom the project was intended, by creating the education facilities and the recreation spaces. As a result of the main intention of creating this project as a landmark, an external population of local city inhabitants and outside tourists visits the library and recreative spaces. After an evaluation of this project I think that this intervention benefits both targeted audiences. On one hand the local inhabitants benefit from the facilities and access to information and to foster and

create new skills, on the other it functions as a tourist attraction. A question that this project raises is who does the Metro de Medellín cable car really benefit? Can the poorest inhabitants of this community really afford this cable car and use it as a mean of transportation? Or was this specifically tailored to provide the external population easy access to Parque Biblioteca España?

One of the main lessons learned from this project is that an iconic educational intervention can positively create an impact in a context where violence and crime prevail. This strategy had an impact in security and changed the general perceptions of an entire neighborhood while still creating a new strong identity for a community. The interaction of the external population with the local inhabitants provides opportunity for social and economic exchange which is a positive outcome from that project allows.



Figure 2.16

2.2.2 Icon Project - Grotão Community Center (2014): São Paulo, Brazil. Urban Think Tank (See Fig. 2.16)

Designed by the nonprofit firm Urban Think Tank, this project is born as a result of a void in the Grotão community caused by the increased erosion due to the hilly nature of the site. A mudslide destroyed dozens of existing houses in a high risk area of this neighborhood due to the increasing presence of constructions in an already dense settlement. The main goals of this project as described by its designers: "The proposed urban model aims to translate a society's need for equal access to housing, employment, technology, services, education, and resources – fundamental rights for all city dwellers – into spatial solution." (Urban Think Tank Web) The project as well aims

to bring better basic infrastructure into this neighborhood, consisting of water, sewage, networks, lighting and public space.

From this unfortunate event of the mudslide, an intervention that re articulates the potentials of this community arises. The project not only brings recreational and sport spaces, but as well a new music school for the community which includes music halls, practice rooms, classrooms, recording studios and performance halls that work as a music factory. Another major component is the terraced platforms that deal with the existing steep slope providing green space and spaces for gardening and harvesting some produce. This design strategy as well provides an opportunity to collect rain water and store it into a lower rainwater cistern.

The main lessons learned from this project are certainly the sensitivity that the designers had into the approach and understanding of the existing site conditions and leveraging upon an unfortunate natural disaster. From this void space they explicitly created a project that responds environmentally and socially to the needs for public space and providing a place for skill making. As a main strategy they created a new community center, a place for social interactions, in other words a new destination in this community. Certainly this project gives a new identity to this whole marginalized and inaccessible neighborhood. The design gives them an iconic project that will certainly raise the community bonds and foster new creativity of the new generations of this neighborhood.



Figure 2.17

2.2.3 Network Project – Favela Bairro Program (1995 – 2010): Río de Janeiro, Brazil (See Fig. 2.17)

The Favela Bairro program's main goal is to integrate the favelas with the rest of the formal city by introducing new infrastructure and social services that would provide better quality of living and engage local residents with their communities. In terms of infrastructure; new streets, paving to existing streets, street lighting, sewage and drainage systems were incorporated in order to ameliorate basic living conditions. Another goal was to facilitate utility services by providing potable water, electricity,

communication systems and new buildings functioning as new community landmarks. In terms of social services, the program aimed to provide child-care centers, social-service centers (with an emphasis on families, children and adolescents, income and work-generating activities), community organization and development, and land ownership titles. A diverse range of positive appraisals to the FB program arose by different professionals and scholars. Justin McGuirk describes the role of this urban renewal project and its social impact: "The aim of the Favela Bairro programme was not just to improve the quality of life in the favelas; it was to raise the perception of the favelas in the urban imaginary" (McGuirk 118).

The Inter-American Development Bank and the World Bank were two major international sources of funding for the Favela Bairro program. The presence of these agencies in the process of design and implementation of the projects had major inputs and strict goals that had to be met in order to keep the funding of these projects. J. Samper, MIT Lecturer for the Department of Urban Studies made a research study focusing on the FB program outcomes and drew a commentary on these agencies: "...the involvement of international agencies, such as the IDB, which forced on local projects specific international and institutional standards, weakened the process of community participation in urban upgrading in Rio de Janeiro's FB project" (Samper Web). By understanding some of the conclusions that this author made, it is evident that the pressures of these international agencies had an adverse impact in not allowing the full involvement of the local residents to take part in the process of upgrading their communities. This opposes to one of the fundamental goals of the FB program, and



proves how this lack of involvement ultimately affects the neighborhood's sense of ownership of their public spaces and empowerment in their communities.



Figure 2.18

2.2.4 Network Project - Complexo de Manguinhos: R o de Janeiro, Brazil. Jorge M. Ja regui Architects (See Fig. 2.18)

The Manguinhos Complex project is one example from the Favela Bairro (FB) program. Designed by the architect and urban designer Jorge Mario J regui; he is one of the most influential key figures in the design of many of the FB intervention

projects. Manguinhos is located in the north zone of Rio de Janeiro, bordered by the favelas Jacarezinho and Parque Arará . This favela is home to 55,000 inhabitants and is one of the poorest neighborhoods in all Rio. This community was facing a marked division caused by a six lane vehicular corridor and a freight rail line, causing many pedestrian accidents and deaths.

One of the main objectives of this project was to create a seam out of a border, create new public and recreative spaces and above all, provide accessibility to the local inhabitants by providing them transportation mobility that will link them to the rest of the city. As part of the first phase of this project, the linear park is the main protagonist and is the organizing element which all the other social related programs and functions revolve around. These social facilities include a school, a library, a legal support office and public showers. This 35,000 square meter linear park runs parallel to Leopoldo Bulhões Avenue and functions as the seam that re-unites two favela neighborhoods that were separated. This public space is achieved by elevating the rail line and providing a public promenade (which Jáuregui relates to the Rambla in Barcelona) that accommodates all the diverse community programs and introduces a multimodal transit station.

The clearly defined edges articulated by the favelas' urban fabric create the figural space where the most important moment of the project occurs. Jáuregui's understanding and sensitivity to create a great urban space out of the existing favela urban fabric demonstrates an interpretation and execution of Rowe's figural space concept.





Figure 2.19

2.2.5 Network Project - Violence Prevention through Urban Upgrading (VPUU) (2006 – 2014): Khayelitsha, Cape Town – ARG Design and others (See Fig. 2.19)

The main objectives of this project were to better the overall quality of life of the inhabitants of Khayelitsha by creating a safer community, provide education against violence, sexual education against HIV and foster recreation activities through sports and outdoor activities. From the outcomes of this design intervention the local inhabitants were the most who benefited from this governmental effort. The main strategies that the team of designers employed to achieve the initial goals were:

- Mapping through GIS and community reports all the spaces that were high violence and crime “hot spots” in Khayelitsha in order to lower and eradicate incidence of attacks.
- The “Active Boxes” are a series of watch towers next to newly created recreative and public spaces. The location for these boxes are based on the identification of the mapping process, there are strategically located in the high risk zones. These function as a main security watch point for the community; they get rid of “blind spots” incorporating the “eyes on the street” concept.
- The architectural proposals and urban strategies were designed with the active involvement of local inhabitants, making them an essential part during the decision making and the design process of their community.
- Provide truly public recreative and open spaces (opposed to the norm in South Africa of fencing parks and open spaces) that engage the streets so that local residents are invited to use these spaces.

## **2.3 Conclusions/Takeaways from the Expert Distillations and Precedent Studies**

The expert distillation process provided me a general understanding about the current theoretical discourses related to slum upgrading strategies. Each of the selected authors and precedent studies have a particular perspective and position regarding on how to design and intervene in the context of urban informality. The following conclusions are based on what I agreed from the lessons learned from these authors and precedent studies. These will be used as a toolkit of ideas and strategies that will inform me in the process of design; it will ultimately aid me to achieve the initial goals in the design application, which is the next step of this investigation. These ideas and takeaways will be tested in Complexo da Maré in R o de Janeiro, the chosen site of intervention.

Paola B. Jacques focused on a comprehensive description that allowed me to better understand the spatial qualities of the favela, specifically the architectural and morphological character of these spaces. From her research I understood the importance of preserving and allowing spatial flexibility, a quality that inherently exist in these settlements. The borders of the favela that face the formal city function as important social and economic centers; these provide great opportunities for the local community to interact and engage with external populations.

From Kim Dovey's research I take an overall understanding of the strategies for incremental urbanism, he specifically advocates for in situ upgrading, focusing on adaptive processes and community self organization. He provided me a better sense of the factors that drive empowerment which are directly influenced by politics and

economic forces which ultimately drive social change within the context of these settlements. There are also great lessons learned through his understanding of the microflows that informality allows, these produce income which make life sustainable for the inhabitants of these communities to mitigate conditions of poverty.

Jorge Fiori addresses and categorizes two main contemporary practice approaches on how to intervene in the context of informal settlements for slum upgrading strategies. After analyzing and interpreting his definitions and example projects of his categories, I agree that the “open urban projects” are interventions that create beyond site impact, which ultimately will positively influence the local and external communities as a whole. These type of interventions are far more ambitious in terms of linking the site interventions with the local communities with broader existing or new city networks, I mainly takeaway from this idea the importance of how the strategies of intervention can cause a catalytic effect and impact beyond site. Another important conclusion I draw from this author is the importance of enhancing the productivity of territory of these sites. This strategy can infuse economical and community growth which will maximize the existing potential of site and its community.

The precedent studies allowed me another comparative lens which provided me valuable information regarding what have been the contributions of contemporary projects, which reflect current best practices and proposed alternative ways for slum upgrading strategies. I deliberately defined the projects in two main categories: the “icon projects” and the “network projects”. Both approaches target different goals and

audiences which are reflected in the nature of each intervention and their impact on and beyond site. The main question of this thesis asks how different are both of these approaches, this arises other questions; what are the lessons learned from each one of these interventions and which one is more effective as a strategy for slum upgrading? After reviewing and analyzing the precedent studies I came to the conclusion that there are certainly virtues and great lessons in both categories. From the "iconic projects" I derive their huge potential of providing a new identity which acts as a statement of the importance that community programs have in their role of creating a new sense of belonging and place in the context in which they are inserted. From the "network projects" I learned about the great outcomes and potential in projects that not only address local issues and problems but as well contribute in future potentials. These types of projects work in terms of creating punctual or local interventions that deliberately tie back to existing or future networks. These projects usually have more community involvement in the design process and a more incremental approach.

There are clearly huge economic and social opportunities in existing vacant and underutilized spaces that can be repurposed and re-inhabited. After reviewing the precedent studies I can see that there is a gap in the discussion about economical opportunity and local entrepreneurship. On one hand they mostly focus on providing services that address; education, recreation, transportation accessibility, security etc. but still no strategies for local economical outcomes. For this reason, I studied the possibilities and the impact that current trends are having in a wide variety of communities around the globe. Programs like makers space and urban agriculture have proven to create and foster huge entrepreneurial and skill opportunities that communities can benefit in multiple ways.

## **Chapter 3**

### **Design Application/Proposal**

#### **3.1 Complexo da Maré Site Description**

Maré is composed by sixteen favela neighborhoods in the north zone of Rio de Janeiro, Paola B. Jacques argues that this complex is one of the most important urban informal settlement laboratories in all Brazil (Jacques 19). She also mentions that many urban experiments have been established along the last decades in Maré. The coast line of this region has been under so many alterations that the original tide (maré) that gave this place its name does not exist anymore. Over the years there have been so many infills that as a consequence interrupted the natural phenomena of the rise of the tide over this region. Almost all of the urban morphologies and architectural typologies found in Brazilian informal settlements are present or were present in Complexo da Maré; from the labyrinthic favela on a hill, to the most orthogonal and rigid Modernist complex (Jacques 21).

##### 3.1.1 Brief History of Complexo da Maré

The Maré settlement began and developed on the coastline and over the surface of the Guanabara bay. The occupation of this territory began in the 1940's (during the largest proliferation of favelas in Rio de Janeiro) shortly before the construction and opening of the Avenida Brasil (1946), which symbolizes the industrial

expansion era in the city. With the prevalent agricultural decadence and the rapid expansion of industrialization during these years, there was a huge migration movement towards cities in Brazil (P. Jacques 21).

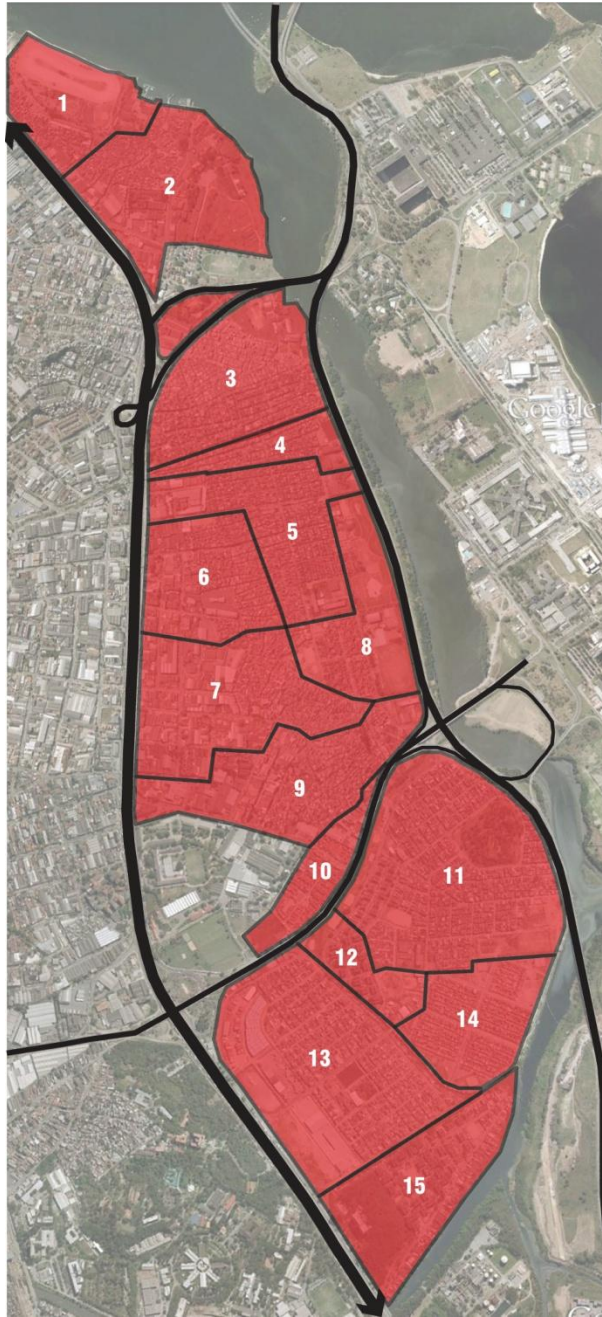
Nowadays this complex is composed by sixteen communities: Morro de Timbau (1940), Baixa do Sapateiro (1947), Conjunto Marcílio Dias (1948), Parque Maré (1953), Parque Roquete Pinto (1955), Parque Rubens Vaz (1961), Parque União (1961), Nova Holanda (1962), Praia de Ramos (1962), Conjunto Esperança (1982), Vila do João (1982), Vila do Pinheiro (1989), Conjunto Pinheiro (1989), Conjunto Bento Ribeiro Dantas (1992), Nova Maré (1996) and Salsa e Merengue (2000). Each of these communities is very different from one another and together they form part the Complexo da Maré which has a population of approximately 130,000 inhabitants.

### 3.1.2 Site Diagrams



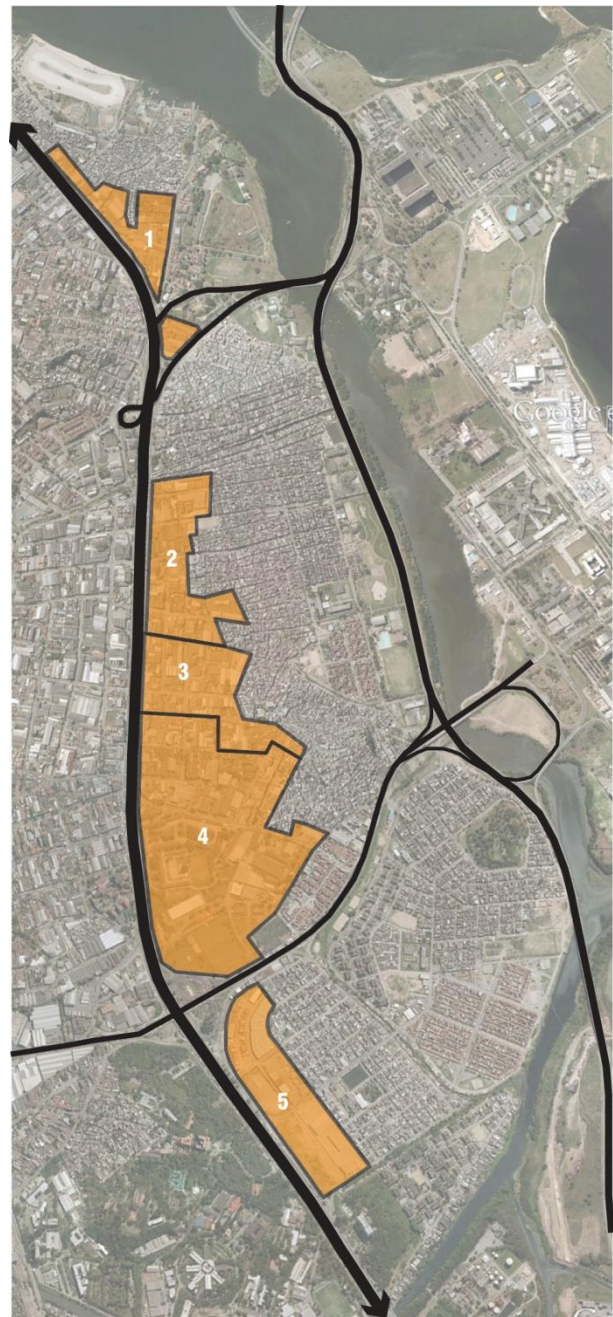
Regional Scale Diagram, Maré in the Context of Rio de Janeiro. Figure 3.1





Maré Neighborhood Diagram. Figure 3.2

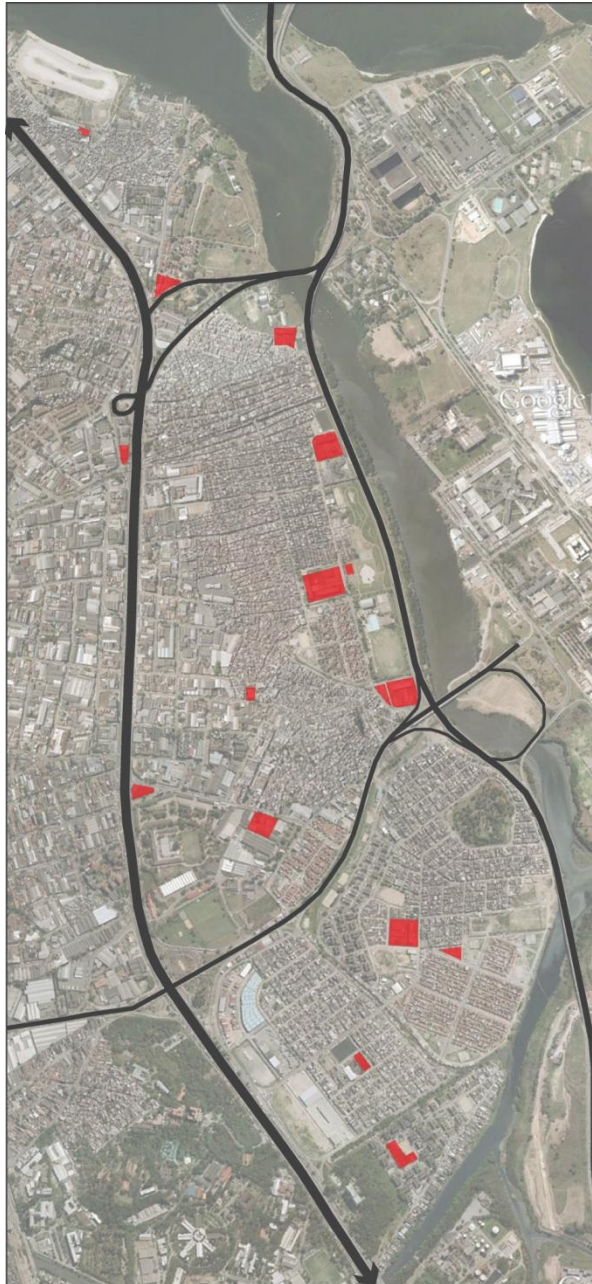
- |                        |                            |
|------------------------|----------------------------|
| 1 Praia de Ramos       | 9 Morro do Timbau          |
| 2 Parque Roquete Pinto | 10 Conjunto Ribeiro Dantas |
| 3 Parque União         | 11 Vila dos Pinheiros      |
| 4 Parque Rubens Vaz    | 12 Conjunto Pinheiros      |
| 5 Nova Holanda         | 13 Vila do João            |
| 6 Parque Maré          | 14 Conjunto Novo Pinheiro  |
| 7 Baixa do Sapateiro   | 15 Conjunto Esperança      |
| 8 Conjunto Nova Maré   |                            |



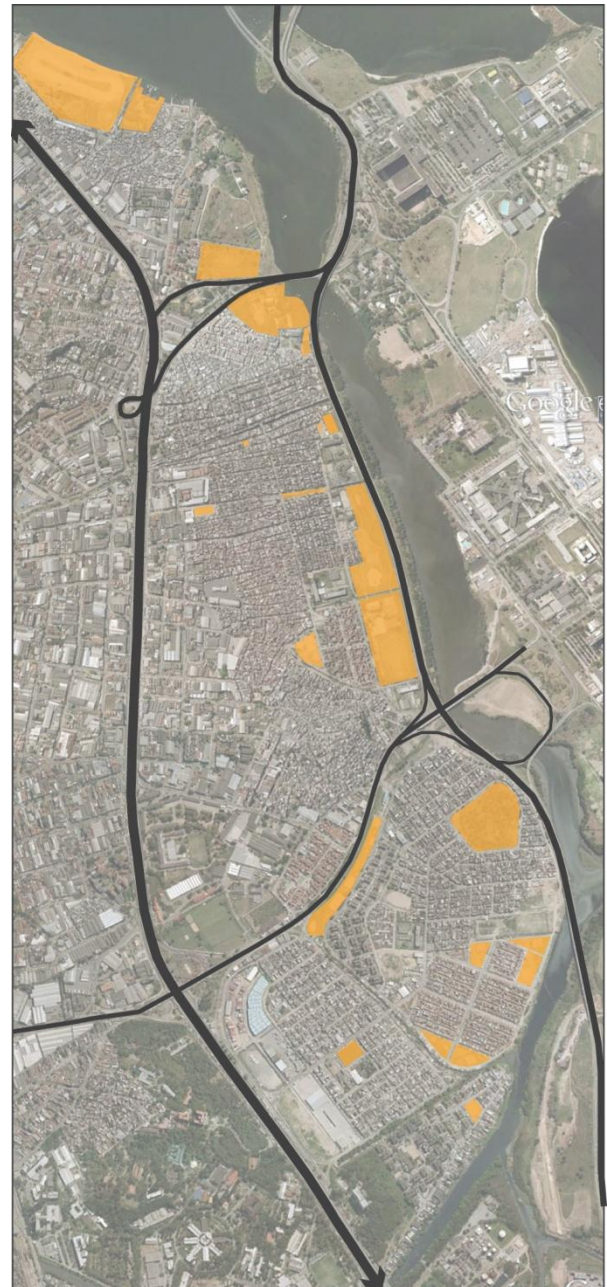
Maré Industrial Complex Diagram. Fig. 3.3

- |                                    |
|------------------------------------|
| 1 Industrial Area of Roquete Pinto |
| 2 Industrial Area of Nova Holanda  |
| 3 Industrial Area of Baixa         |
| 4 Industrial Area of Timbau        |
| 5 Industrial Area of Vila do João  |





Educational Programs Diagram. Figure 3.4



Recreational & Green Space Diagram.  
Figure 3.5



Military Bases and Academies Diagram. Figure 3.6

### **3.2 Problem Statement**

One of the major issues that these neighborhoods face is that they have been struck by violence and crime due to the prevailing drug wars in this favela over the past years, creating a prevailing social boundary and stigma. On the other hand, this site has a series of underutilized spaces with untapped potential that can be seen as opportunities to self-empower the local inhabitants of these communities. These spaces and potentials can be perceived as scattered pieces that are just waiting for an assemblage to occur. The project seeks to be a catalyst of positive change, and an attempt to raise the quality of life and to an extent ameliorate the levels of security and crime.

The pacifying Police Unit and the Military Police occupied the favela in March 2014, in an effort to “pacify” it before the events of the 2014 World Cup and the 2016 Olympics. Unfortunately over 28 deaths have been registered in Maré, mostly drug dealers and a police officer. This occupation has been extended until June of 2015, and it has ameliorated to an extent the levels of crime and security. The media of Rio has only been focusing on the violence and crime of Maré, rather than promote and celebrate many of the local community organization activism and achievements in self-empowering their communities. This favela has more than 100 local community organizations that range from religious organizations, two samba schools, dancing school, the first favela LGBT organization and local neighborhood watch patrol representation.

### 3.3 Project Description

The project intervention in Complexo da Maré proposes a hybrid mix of programs that will address multiple audiences and social goals. The scale of this proposal remains at an urban design/programmatic strategy which addresses the site's potential to leverage upon existing assets and underutilized spaces. The interventions are site specific, mostly focused on benefitting its local inhabitants while still having as a goal to allow external visitors to interact with the local community through the new proposed programs. The design strategies will address and better guide practitioners on how to intervene and design within these types of spaces. The multiple goals focus on the provision of social integration, self organization and economic opportunities which will result in bettering the quality of life of the people who live in these communities. The programs chosen for this site will have these goals as main drivers for their selection and placement in the site:

- A series of makers space will occupy a series of abandoned warehouses, this reuse strategy will create opportunities for local inhabitants to develop new skills which will enable them to sell the goods they produce and above all prepare them with the skills necessary to allow them to find better job opportunities.
- An open market and seven acres of urban agriculture will function as another source of productivity and economical opportunity for the local inhabitants of this community. This will allow social interactions with external populations which will begin to slowly break the social barrier and negative perceptions of this community.



### 3.4 Index - Selection of the Operative Diagrams

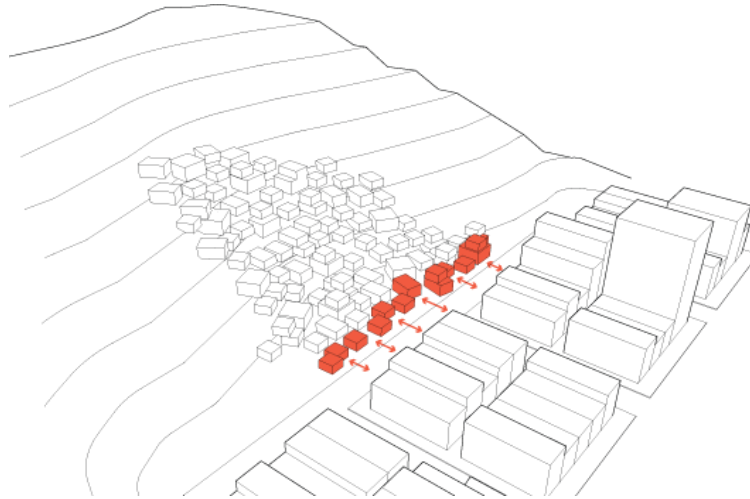


Figure 3.7

Operative Diagram 1 - "The borders that separate the favela from the city work symbolically as a "center," concentrating most of the commerce and services" (P. Jacques Web)(See Fig. 3.7)

Translation into Design Strategy - articulate and transform two main edges of the site into "centers": 1) The East edge of the site that is bordered by Ave. Brasil and 2) The West edge that faces Linha Vermelha highway and converts it into a car drop-off with on street parking.

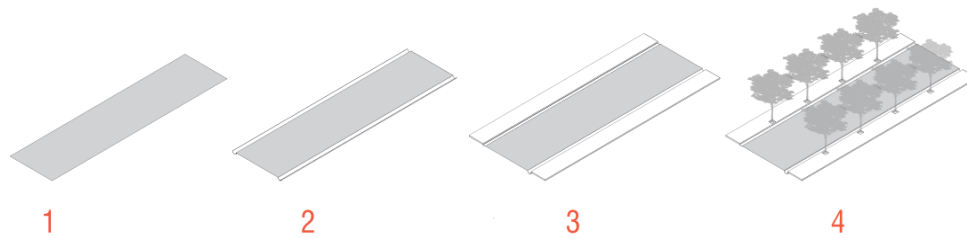


Figure 3.8

Operative Diagram 2 - "On-site upgrading through a principally incremental process – adapting existing infrastructure, urban design and tenure over time." (K. Dovey) (See Fig. 3.8)

Translation into Design Strategy – Re-use of existing infrastructure and spaces (bike lanes in existing streets and re-inhabit vacant warehouses). Incremental urban design strategies, by first articulate the each site edge at a time (phasing).



Figure 3.9

Operative Diagram 3 – "High levels of informality enable micro- flows of information, goods, materials and practices that produce income and make life sustainable under conditions of poverty. Informality is a resource for managing poverty." (K. Dovey) )(See Fig. 3.9)

Translation into Design Strategy – Create and provide a framework that can support sharing of knowledge & skills. As a strategy to achieve this, I propose a series of makers space in vacant warehouses along the East edge of the chosen site.

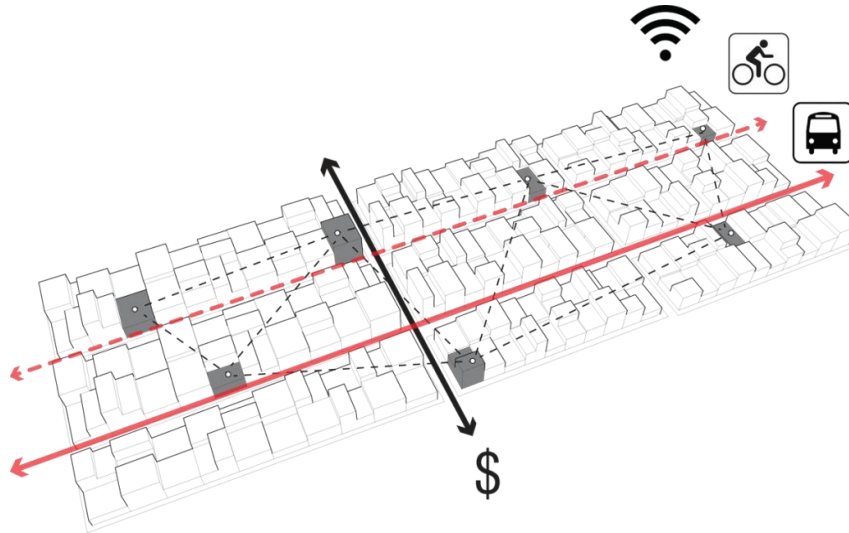


Figure 3.10

Operative Diagram 4 – “Open urban projects”: Projects that seek very explicitly to impact beyond site, articulating and connecting different and multiple scales. “footprints”, “acupunctures” or “benign metastasis” describe the ambition of impacting beyond site on a larger system of relations and across systems” (K. Dovey) (See Fig. 3.10)

Translation into Design Strategy – Create a network of catalyzing interventions as a strategy to impact beyond site. The proposed programs and networks are an attempt to achieve this goal. These networks are: the makers space, the community urban agriculture fields, the market and the bike route.



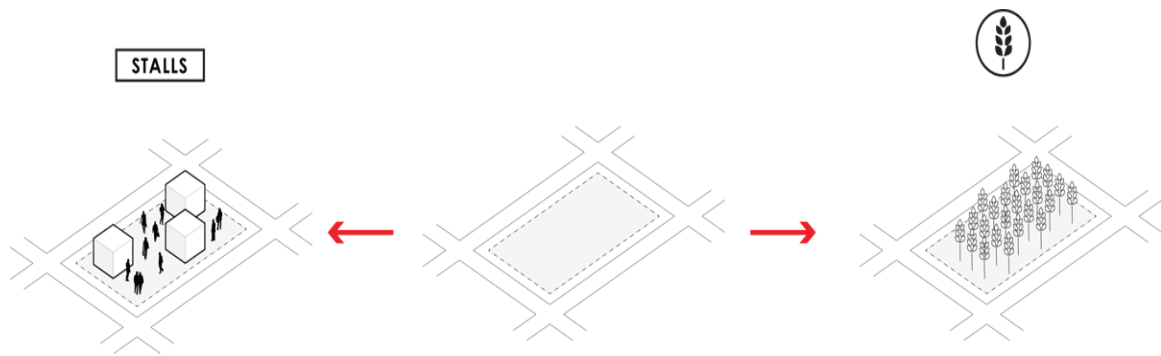


Figure 3.11

Operative Diagram 5 – “Formulate spatial strategies that can enhance the productivity of the territory.” (J. Fiori)(See Fig. 3.11)

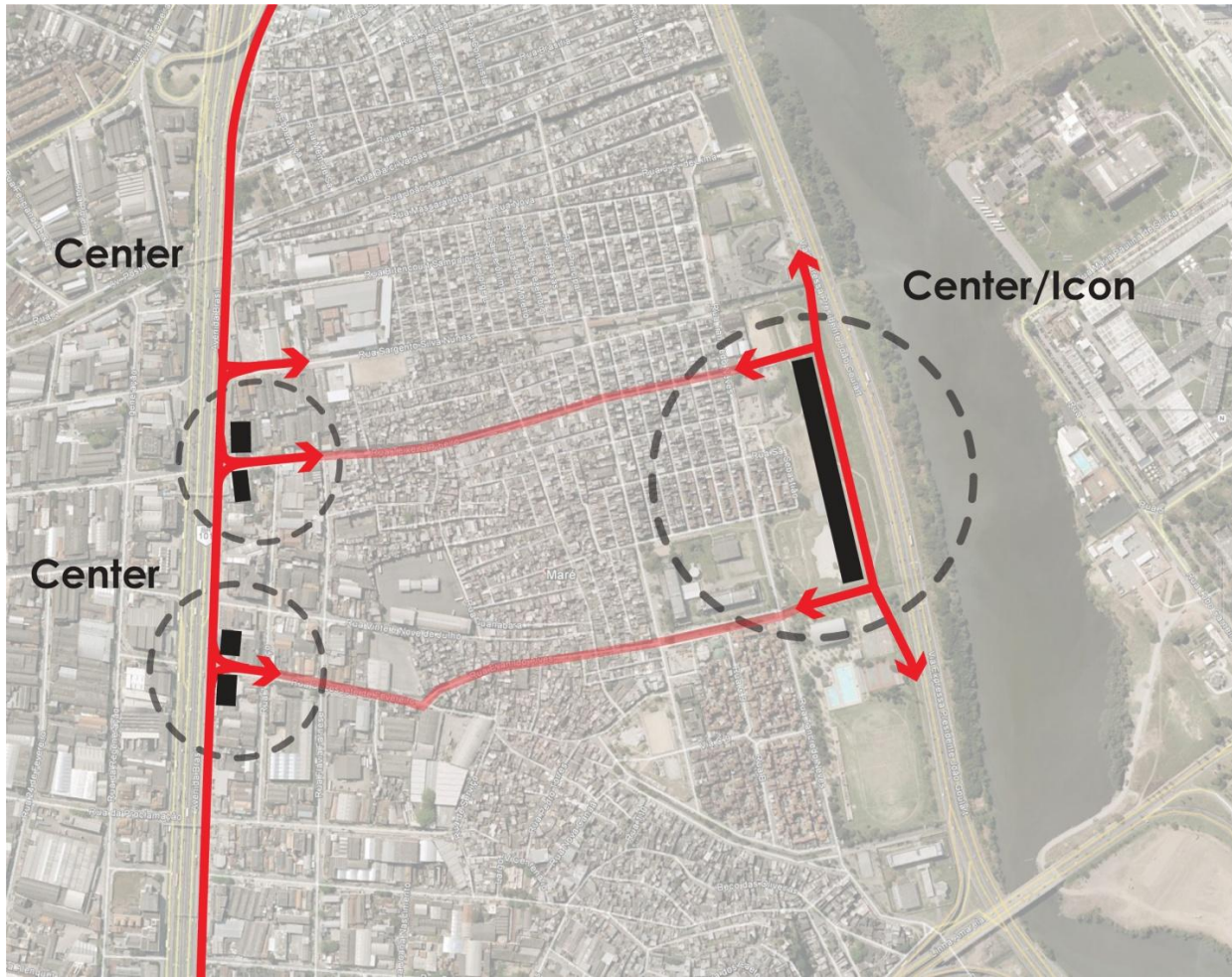
Translation into Design Strategy – As a main strategy, provide a framework of spaces to showcase and sell the goods produced in the favela (makers space, urban agriculture etc.).

## 3.5 Design Operations

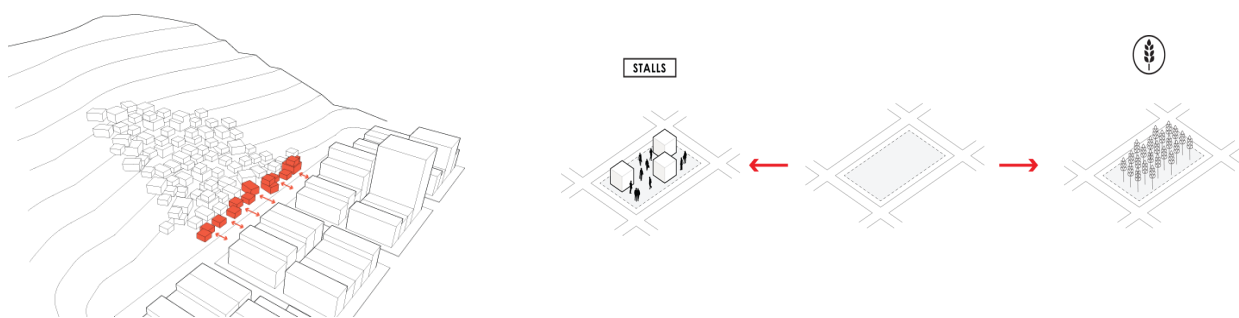
### 3.5.1 Project Diagrams



Diagram of Complexo da Maré's Main Borders – Convert into Seams. Figure 3.12



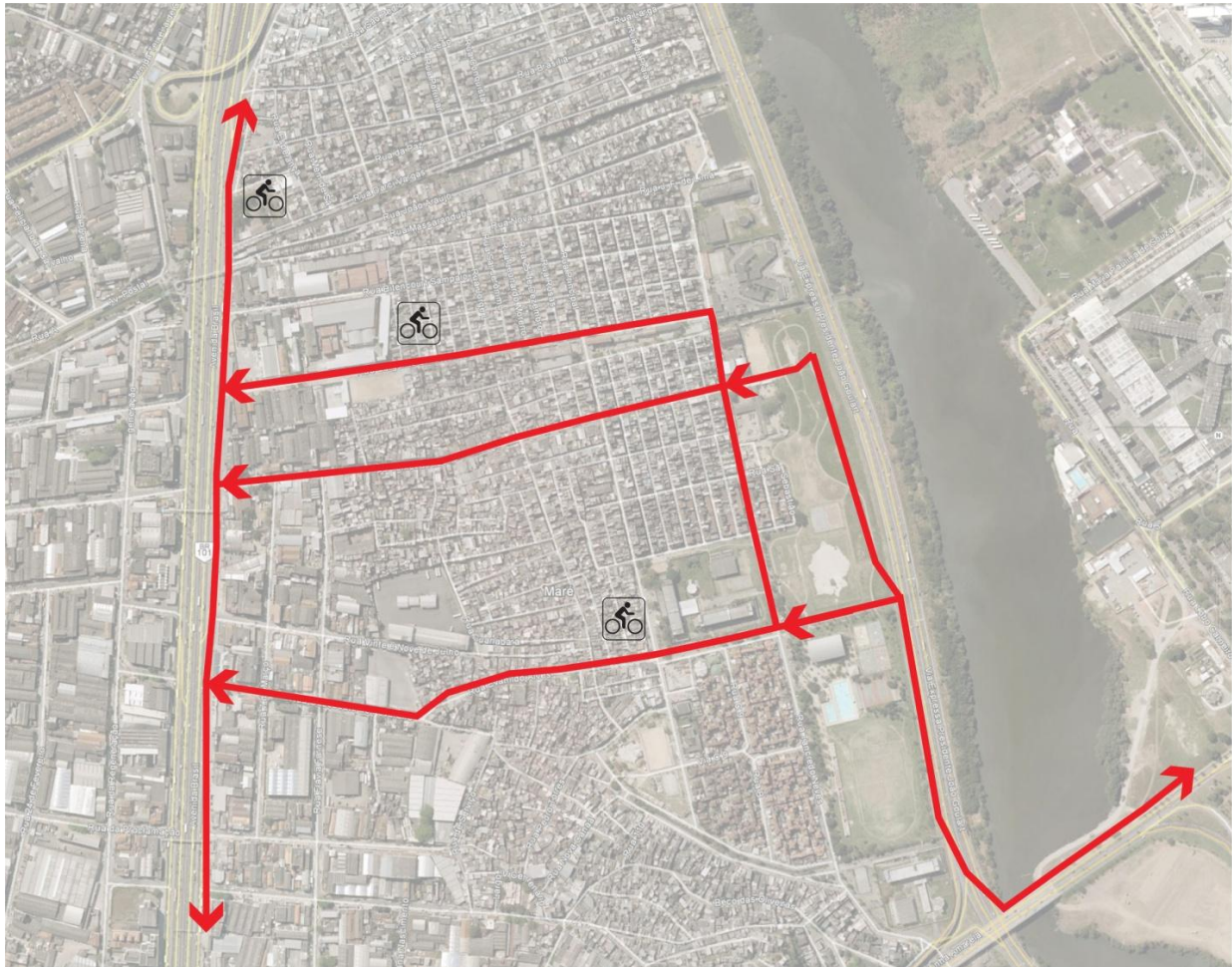
Creation of New Centers Diagram. Figure 3.13



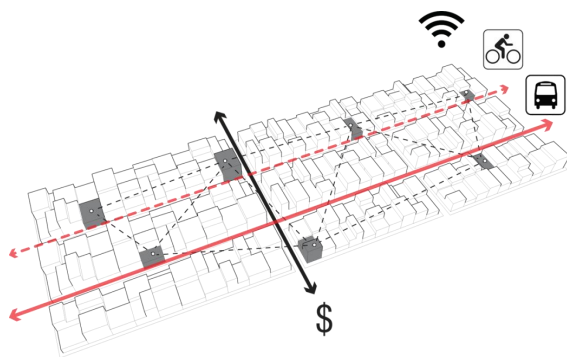
**Operative Diagram Application:**  
Importance of Favela Borders as  
“Centers”

**Operative Diagram Application:**  
Importance of Favela Borders as “Centers”

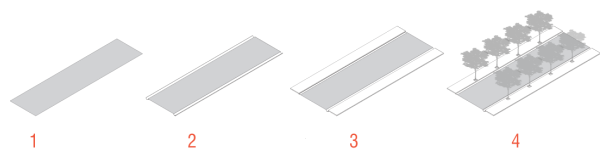




Proposed Bicycle Network Diagram. Figure 3.14



**Operative Diagram Application:** Networks  
that Connect different and multiple scales



**Operative Diagram Application:**  
Incremental infrastructure and Processes

### 3.5.2 Site Strategy Plan



Punctual and strategic site interventions. Figure 3.15

On the East edge of the site that faces Ave. Brasil there is a great opportunity to articulate the entrances to this favela, in order to foster visitors and other city dwellers to create interactions with the local community. As a strategy of doing so, I decided to create two main gateways which will function as new "centers" as defined by P. Jaques. Along this edge of the site, there is an opportunity for re-use of existing abandoned warehouses by repurposing them as makers space which will be the main program that I have suggested for these gateways (identified in the plan as the yellow

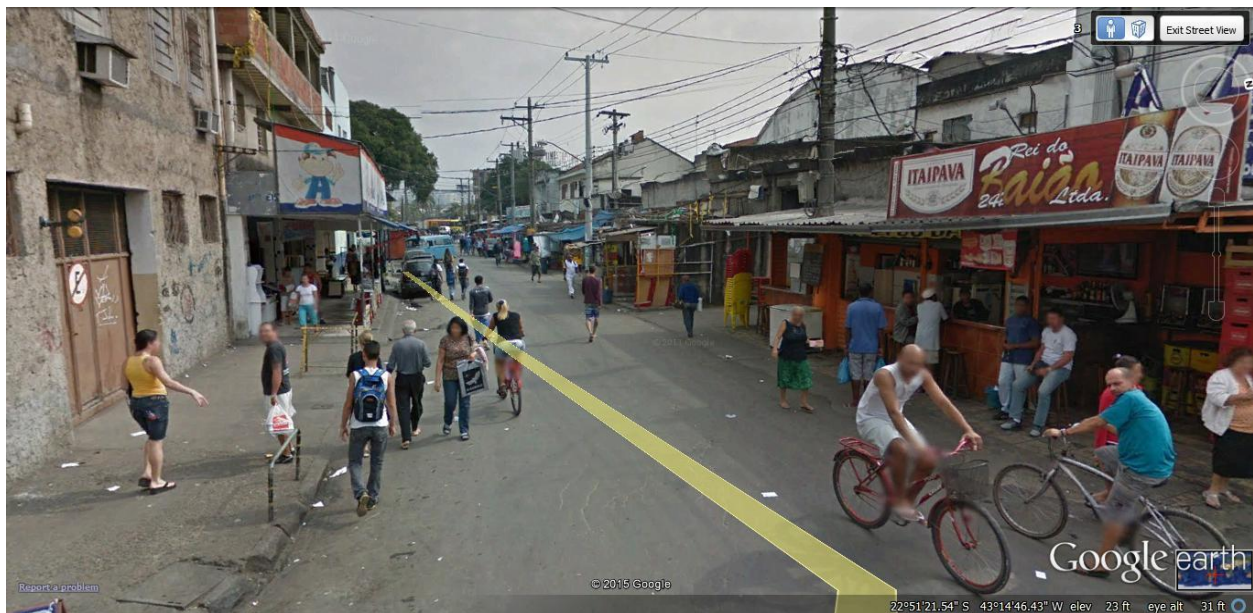
interventions). On the East edge of the site I saw the opportunity to design a car drop-off from the Linha Vermelha highway as a strategy to provide a spatial connection from this congested and major artery into the site. This edge will serve as another main “center”. I have suggested to create a market space along the edge of the newly created car drop-off. This will be activated by local vendors and the visitors that come from the highway, allowing social and economical interactions. In the underutilized existing green space I have suggested in order to further enhance the productivity of the site a series of urban agriculture fields, which will cover approximately seven acres. Both of these interventions will be connected by an existing main commercial street (Rua Teixeira Ribeiro) that runs perpendicular to the two “centers” (makers space and Urban agriculture/market). In addition to these interventions I propose a network of bike routes that will link the Universidade Federal do Rio de Janeiro (UFRJ) with Complexo da Maré, enhancing connectivity at the pedestrian/biking level.



### 3.5.3 Photos of Existing Conditions on Site: Main Local Retail Street Rua Teixeira Ribeiro



Google Earth Image of Rua Teixeira Ribeiro looking towards the East (Linha Vermelha Highway) Figure 3.16



Google Earth Image of Rua Teixeira Ribeiro looking towards the West (Ave. Brasil) Figure 3.17

### 3.5.4 Perspective Diagrams and Sections

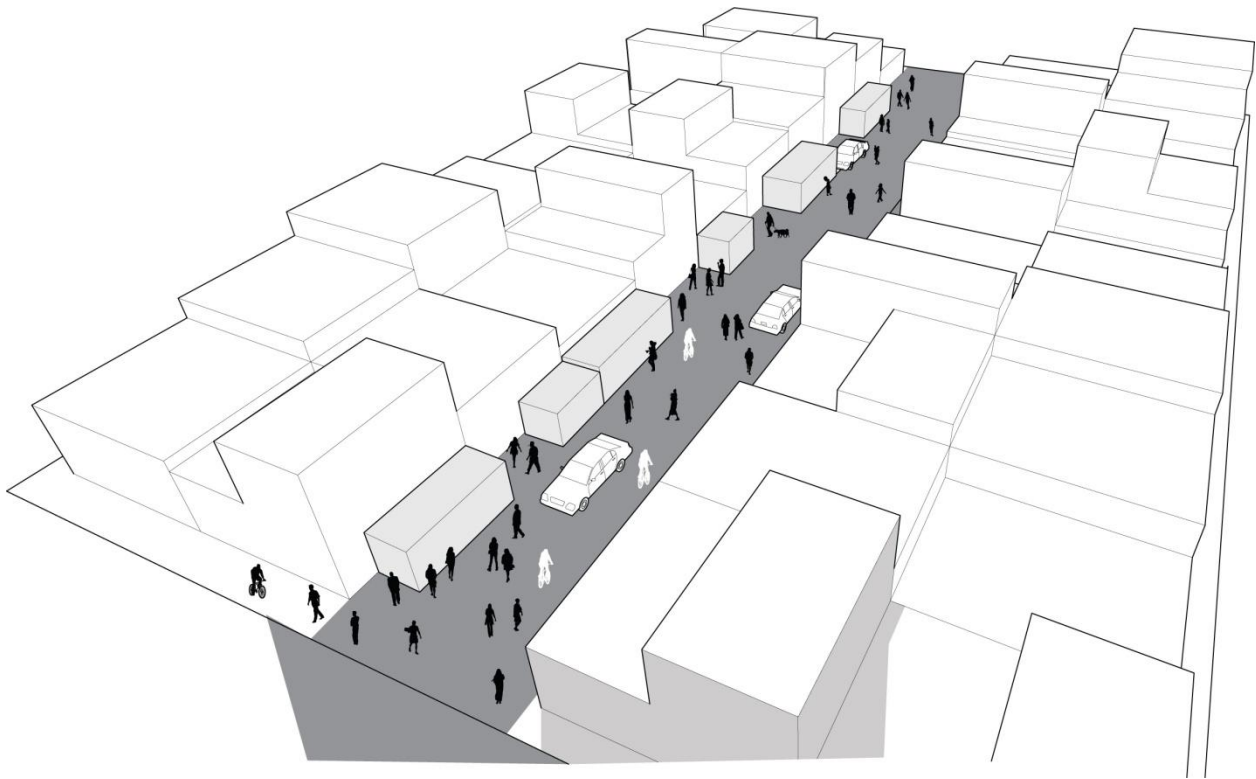
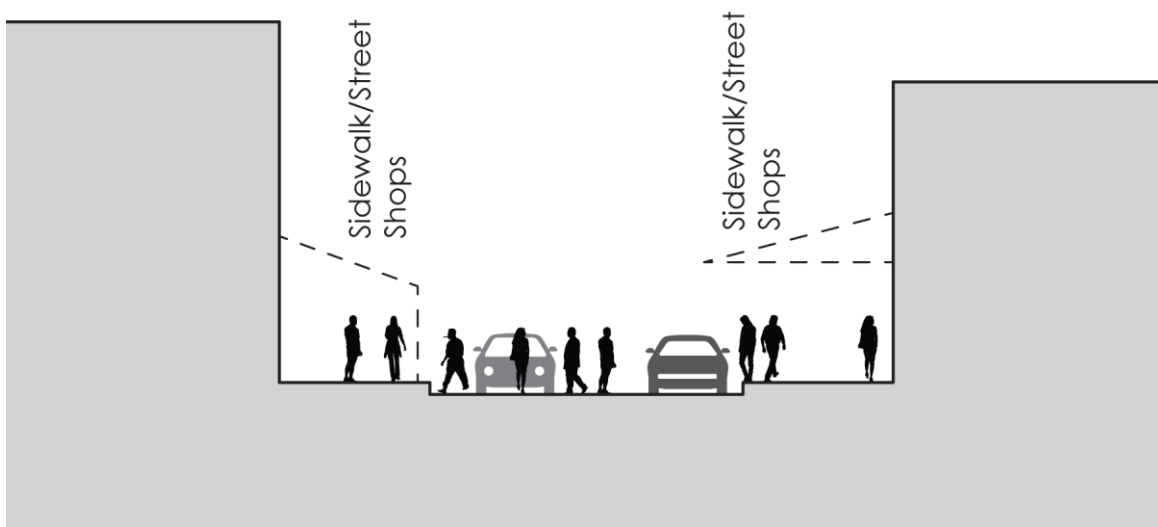
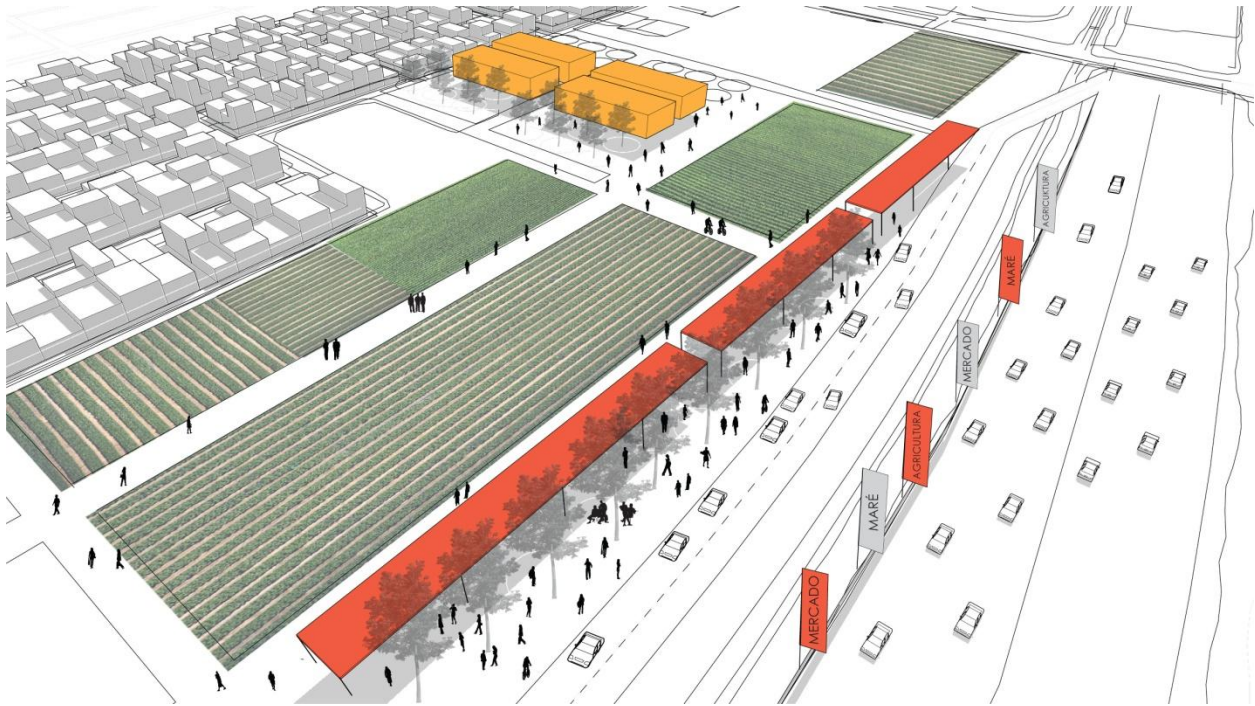


Diagram that illustrates detail of existing commercial street - Shared Space, Existing Condition in Rua Teixeira Ribeiro Figure 3.18



Scale: 1/16" = 1' - 0" Shared Space Street Section Rua Teixeira Ribeiro. Figure 3.19





Center: Open Market & Urban Agriculture by Linha Vermelha Highway Border- Aerial Perspective. Figure 3.20

## **Chapter 4**

### **Conclusion**

The main strategies of the design proposal were based on the lessons learned from the research of the expert distillations and the precedent studies, which informed and provided the framework for the design moves in the chosen site of Complexo da Maré. A hybrid mix of programs and the combination of two design strategies (incremental and iconic) were compared and tested in the design application. After the research and the design process I strongly believe that a combination of both of these design approaches are very effective as a strategy for slum upgrading. Both the incremental and the iconic design approach complement each other. On one hand the incremental design processes allows to an extent more community participation/involvement and transformations over time, on the other, the iconic intervention can provide a new sense of place and identity for a community, while fostering external populations to visit and interact with the local inhabitants. By combining both design strategies it allows not only to work with the local community but as well try to create a link with the external populations and attempt to soften the prevailing social barrier that has been constructed in the citizen imaginary.

The overall design proposal/intervention in Complexo da Maré is very modest and punctual in its nature, but yet it addresses the main goals established in the beginning of this investigation. The design intervention did not intend to solve all of the issues that Complexo da Maré faces regarding crime, drug trafficking or violence. But

instead, be a commentary and provide ideas on slum upgrading in an attempt to better the quality of life of the people who inhabit these types of communities.

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